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REMARKS

Claims 1-37 are pending in the present Application. Claims 1, 24, 26, 32, 36, and 37 have been amended, leaving Claims 1-37 for consideration upon entry of the present Amendment.

Claims 1, 24, 32, and 37 have been amended to add the terms "cyclohexyl, isopropyl, 3-N,N-dimethylaminopropylamine, N,N-diethylaminoethyl" for group R. Support for the amendment can be found in Table 4 of the Specification as filed. No new matter has been added by this amendment.

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Non-compliance of previous Amendment filed January 3, 2005

Claim 26 was amended to correct typographical errors in the Amendment filed January 3, 2005 to read as follows.

26. (Original) The composition of Claim 21, wherein said polymeric resin is a polycarbonate resin.

Applicants' attorney had inadvertently failed to enter the correct status identifier for claim 26. Accordingly, in the present Amendment, claim 26 is being amended and contains the correct status identifier.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claim 36 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner has argued that there is insufficient antecedent basis for the term "the mold." Claim 36 has been amended to recite --a mold-- in line 2 of the claim. Reconsideration and withdrawal of this rejection are respectfully requested.

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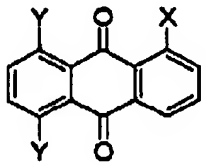
Claim Rejections Under 35 U.S.C. § 102(b)

Claims 32-35 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 2,848,462 to Gutzwiller et al. ("Gutzwiller"). Applicants respectfully traverse this rejection.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

Gutzwiller generally discloses anthraquinone dyestuffs of the general formula



wherein each of X and one Y stands for the same radical of the formula $C_mH_{2m+1}NH$- in which m is one of the integers 5 and 8, and the other Y is hydrogen. Examples of the formula $C_mH_{2m+1}NH$- for X and Y include 1-aminopentane, 1-amino-1-methyl-butane, 1-amino-1-methyl-1-methyl-propane, 1-aminooctane and 1-amino-2-ethyl-hexane or mixtures thereof, and the mixtures of these amines with, for example, 1-a minohexane and 1-aminoheptane. Column 2, lines 16-24.

Independent claim 32 has been amended where R is selected from the group consisting of cyclohexyl, isopropyl, 3-N,N-dimethylaminopropylamine, N,N-diethylaminoethyl, an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, and a 6-membered heterocyclic ring. Gutzwiller only teaches specific anthraquinone dyestuffs wherein groups X and Y of the Gutzwiller general structure are of the formula $C_mH_{2m+1}NH$- where m is 5 and 8. It does not teach anthraquinone dyestuffs having the particular R groups as is required by claim 32. As each and every limitation of claim 32 and its dependent claims 33-35 are not taught by Gutzwiller, the Applicants respectfully request reconsideration and removal of the rejection.

Claims 1-7, 10-15, 17-23, and 37 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 4,863,634 to Claussen et al. ("Claussen"). Applicants respectfully traverse this rejection.

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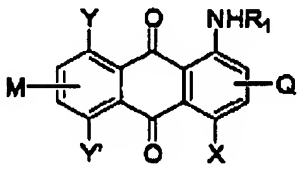
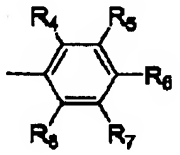
Claussen generally discloses dyestuffs of the formula



I

in which X designates OR_2 or a group NHR_2, Y designates H or a group NHR_2 or OR_2, Y' designates H or NHR_1, R_1 and R_2 designate H, alkyl, cycloalkyl, aryl or aralkyl and if Y or Y' represents H, Q designates aryl, a thienyl radical or a group --OR_2, --NHR_3, --SO_2 R_3, --S--CO--R_3, --CO--SR_3, --SR_3, --CH=NR_3, --$COOR_3$, --$OCOR_3$, --$OCOOR_3$, --NHCO--OR_3, --O--SO_2 --R_3, --NH--CO--NHR_3, --O--CO--NHR_3, --CHO, --O--CH_2 CH_2 --OR_3 or --SO_3 R_3, M designates H, halogen or Q, R_3 designates alkyl, aralkyl, cycloalkyl or a heterocyclic radical or a radical Z of the formula



wherein R_4 and R_8 denote H, halogen, CF_3, alkyl or alkoxy and R_5 and R_6 denote R_4, --SR_3, --NO_2, --OR_3, --CO_2 R_3, --COR_3, --$SCOR_3$, --SO_3 R_3, --$NHCONHR_3$, --$OCONHR_3$, --OSO_2 R_3, --NH--CO--O--R_3, --$OCOR_3$, --$(CH_2)_2$ CN, aryl, aralkyl, cycloalkyl or a heterocyclic radical and R_7 denotes H, alkoxy or alkyl, and if Y represents NHR_2 or OR_2 and Y' represents NHR_1, M represents Q and Q denotes a radical --L--Z, L denoting an O or S atom or a group --NR_1 --. Abstract, Emphasis added.

Claussen fails to teach each and every limitation of independent claims 1 and 37. The anthraquinones of the current independent claims 1 and 37, as amended, require an amine group at the 1 and the 8 position and a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, a nitro group, --COR_9, --$COOR_9$, --$NR_{10}COR_{11}$, --$NR_{10}SO_2R_{11}$, --$CONR_9R_{10}$, --$CONHSO_2R_{11}$, or --SO_2NHCOR_{11} at the remaining positions (R_2-R_7). When the dyestuff of Claussen has an amino group at positions 1 and 8, a --OR_2, -NHR_2, or a --NHR_1 group is present in at least one of the other positions on the ring (Note X is not defined as hydrogen in Claussen). These compounds are structurally different than the anthraquinones of independent

claims 1 and 37. As Claussen fails to teach each and every limitation of independent claims 1 and 37 and their dependent claims, Claussen fails to anticipate claims 1-7, 10-15, 17-23, and 37. Reconsideration and withdrawal of this rejection are respectfully requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-7, 10-15, 17-23, and 37 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Claussen. Applicants respectfully traverse this rejection.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

As discussed above, Claussen is directed to dyestuffs of the general formula I where when an amino group is present at positions 1 and 8, a $-OR_2$, $-NHR_2$, or a $-NHR_1$ group is present in at least one of the other positions on the ring, especially the 4 or 5 position. Claussen fails to teach a 1,8-diaminoanthraquinone having any of the substituents for R_4 and R_5 of the present claims. Specifically for the compounds of the current claims, none of the substituents at positions 4 or 5 include $-OR_2$, $-NHR_2$, or a $-NHR_1$ group.

Furthermore, one of ordinary skill in the art would not be motivated to used a 1,8-diaminoanthraquinone without Claussen's suggested substituents of $-OR_2$, $-NHR_2$, or a $-NHR_1$ at positions 4 or 5 of the anthraquinone structure. This is true as all of Claussen's dyestuffs having an amino group at positions 1 and 8 all have one of the following groups at the 4 or 5 position: $-OR_2$, $-NHR_2$, or a $-NHR_1$. As Claussen's compounds are structurally different than the anthraquinones of independent claims 1 and 37, Claussen fails to teach or suggest each and every limitation of

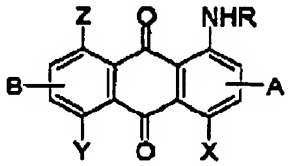
independent claims 1 and 37 and their dependent claims. Reconsideration and withdrawal of this rejection are respectfully requested.

Claims 1-6, 10-13, 15, 17-20, and 37 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Gutzwiller. Applicants respectfully traverse this rejection.

Gutzwiller fails to teach or suggest anthraquiniones according to independent claims 1 and 37 where the R group is required to be selected from the group consisting of cyclohexyl, isopropyl, 3-N,N-dimethylaminopropylamine, N,N-diethylaminoethyl, an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, and a 6-membered heterocyclic ring. Gutzwiller only teaches specific anthraquinone dyestuffs wherein the alkyl chain of the formula $C_mH_{2m+1}NH$- contains 5 and 8 carbon atoms. It does not teach or suggest the anthraquinone dyestuffs having the particular R groups as is required by independent claims 1 and 37. One of ordinary skill in the art would not be motivated to deviate from Gutzwiller's teaching of using an alkyl chain having 5 or 8 carbon atoms as all of Gutzwiller's general structures and specificac examples have the amino group substituted by an alkyl chain having 5 or 8 carbon atoms. As each and every limitation of claims 1 and 37, and dependent claims 2-6, 10-13, 15, and 17-20 are not taught or suggested by Gutzwiller, the Applicants respectfully request reconsideration and removal of the rejection.

Claims 8, 9, and 16 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Claussen in view of U.S. Patent No. 3,923,454 to Genta ("Genta"). Applicants respectfully traverse this rejection.

Genta generally discloses anthraquinones containing phenylsulfonyl groups suitable for the dyeing of polyester materials and for the coloration of rigid plastic materials. The aminoanthraquinone includes



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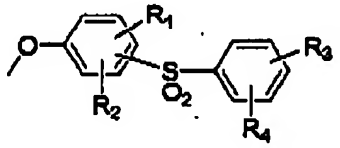
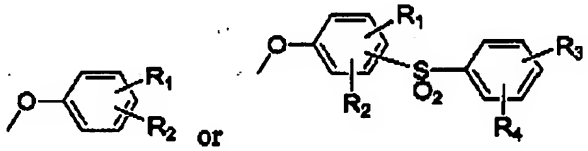
R is hydrogen or lower alkyl; two of X, Y and Z are independently hydroxy, amino or lower alkylamino; and the other of X, Y and Z is independently hydrogen, hydroxy, amino, nitro, or lower alkylamino; one of A and B is an arylsulfonyl group of the formula



and the other of A and B is hydrogen,



each of R_1 and R_2 is independently hydrogen, chlorine, bromine, lower alkyl or lower alkoxy; and

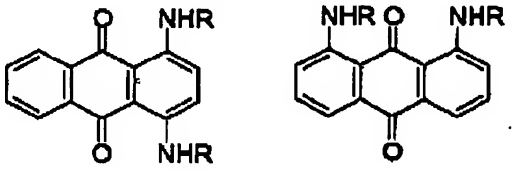
each of R_3 and R_4 is independently hydrogen, chlorine, bromine, lower alkyl, lower alkoxy or nitro; each aminoanthraquinone of the mixture having bonded to aromatic carbon atoms an average of 0.001 to 4.0 chlorine or bromine atoms. Column 1, line 40 to column 2, line 15.

Claims 8, 9, and 16 all ultimately depend from claim 1. As mentioned above, Claussen fails to teach or suggest each and every limitation of independent claim 1. Furthermore, Genta fails to supply the requisite teaching or suggestion absent from the Claussen reference. Genta fails to teach or suggest 1,8-aminoanthraquinones wherein R_2 - R_7 are, individually, selected from the group consisting of a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, a nitro group, $-COR_9$, $-COOR_9$, $-NR_{10}COR_{11}$, $-NR_{10}SO_2R_{11}$, $-CONR_9R_{10}$, $-CONHSO_2R_{11}$, and $-SO_2NHCOR_{11}$; in which R_9 and R_{10} are, individually, selected from the group consisting of a hydrogen atom, an aliphatic group, an aromatic group, and a heterocyclic group; wherein R_{11} is selected from the group consisting of an aliphatic group, an aromatic group, and a heterocyclic group. As both Claussen and Genta fail to teach or suggest each and every limitation of claim 1, they fail to render the claim obvious. As claims 8, 9, and 16 all ultimately depend from

claim 1, they too are not rendered obvious. Reconsideration and removal of the rejection is respectfully requested.

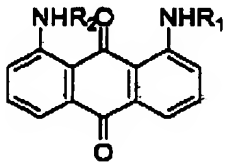
Claim 37 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 3,960,751 to Moriyama et al. ("Moriyama") or U.S. Patent No. 5,882,358 to Smith et al. ("Smith"). Applicants respectfully traverse this rejection.

Moriyama generally discloses an electro-optical element comprising a nematic liquid crystal composition and at least one compound represented by the formula:



wherein R is an alkyl radical having from 4 to 20 carbon atoms.

Smith generally discloses automatic transmission fluid containing a red dye. The red dye includes 1,8-diaminoanthraquininone compounds of the formula



where R_1 and R_2 are the same or different alkyl or substituted alkyl groups, a cycloalkyl group containing at least 3 carbons or 2-alkylphenyl or 2-alkyloxyphenyl group. The alkyl, cycloalkyl and substituted alkyl groups contain at least 2 carbons each. The alkyl groups preferably contain 2-12 carbons and the substituted alkyl groups contain up to 12 atoms. Column 2, lines 10-33.

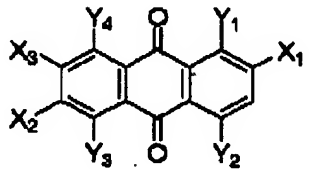
Neither Moriyama nor Smith, alone or combined, teaches or suggests each and every limitation of claim 37 as the particular 1,8-aminoanthraquinones of the claim are not taught or suggested. Claim 37, as amended herein, requires R to be selected from the group consisting of an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, and

a 6-membered heterocyclic ring. There is no teaching of anthraquinones having such substitution for R in either of the two references.

Furthermore, there is no motivation for one of ordinary skill in the art to modify or combine the teachings of Moriyama and Smith as they both teach only alkyl groups for R, and R_1 and R_2 respectively. One of ordinary skill in the art would be motivated to use a 1,8-dialkylaminosubstituted anthraquinone and not one containing an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, or a 6-membered heterocyclic ring. As a prima facie case of obviousness has not been established for claim 37, the Applicants respectfully request reconsideration and removal of the rejection.

Claims 1-7, 10-13, 15, and 17-26 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 3,960,751 to Moriyama et al. in view of U.S. Patent No. 4,689,171 to Blunck et al. ("Blunck"). Applicants respectfully traverse this rejection.

Blunck generally discloses dyestuffs of the formula



in which Y_1, Y_2, Y_3, Y_4 designate hydrogen, halogen, nitro, amino, alkylamino, arylamino, cycloalkylamino, aralkylamino, alkylthio, arylthio, cycloalkylthio, aralkylthio or hydroxyl, it being possible for the hydrocarbon radicals to be sustituted, with the proviso that (a) at least one of the substituents Y_1, Y_2, Y_3 or Y_4 does not denote hydrogen, (b) a maximum of two of the substituents Y_1, Y_2, Y_3 and Y_4 designate halogen and either

(c_1) X_1, X_3 represent halogen, $-R_1$, $--OR_1$ or $-SR_1$, R_1 denoting optionally substituted alkyl, it being possible for the alkyl chain to be substituted by an oxygen atom or several non-adjacent oxygen atoms, optionally substituted aryl, optionally substituted cycloalkyl, optionally substituted aralkyl or an optionally substituted heterocyclic radical and X_2 designating hydrogen,

(c_2) X_1, X_2 denote halogen, [*substituted phenyl, phenoxy, and thiophenyl*] or

(c_3) X_1 designates halogen, X_2 designates $-OR_1$ or $-SR_1$ and X_3 designates hydrogen.

Neither Moriyama nor Blunck, taken alone or together, teach or suggest each and every limitation of independent claims 1 and 24. As amended, the 1,8-diaminoanthraquinones of claims 1 and 24 require R to be selected from the group consisting of cyclohexyl, isopropyl, 3-N,N-dimethylaminopropylamine, N,N-diethylaminoethyl, an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, and a 6-membered heterocyclic ring. None of these particular anthraquinones are taught or suggested by Moriyama or Blunck.

Blunck's disclosure of a general anthraquinone formula is too broad to render the particular 1,8-diaminoanthraquinones of independent claims 1 and 24 obvious. It is worthy of note that all of Blunck's exemplary 1,8-diaminoanthraquinones contain unsubstituted amines at positions 1 and 8. One of ordinary skill in the art would not be motivated to substitute the amine groups at positions 1 and 8 with a cyclohexyl, isopropyl, 3-N,N-dimethylaminopropylamine, N,N-diethylaminoethyl, an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, or a 6-membered heterocyclic ring as is required by independent claims 1 and 24. Accordingly, the applicants respectfully request reconsideration and removal of the rejection to claims 1-7, 10-13, 15, and 17-26.

Claims 8, 9, 16, 28-30, and 32-35 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over U.S. Patent No. 3,960,751 to Moriyama et al. in view of U.S. Patent No. 4,689,171 to Blunck et al. and further in view of U.S. Patent No. 3,923,454 to Genta. Applicants respectfully traverse this rejection.

Moriyama, Blunck, or Genta, taken alone or together, do not teach or suggest each and every limitation of independent claims 1, 24, and 32 from which claims 8, 9, 16, 28-30, and 33-35 all ultimately depend. As amended, the 1,8-diaminoanthraquinone of claims 1, 24, and 32 require R to be selected from the group consisting of cyclohexyl, isopropyl, 3-N,N-dimethylaminopropylamine, N,N-diethylaminoethyl, an allyl group containing 3 to 20 carbon atoms, a hydroxyl group, a 5-membered heterocyclic ring, and a 6-membered heterocyclic ring. As discussed previously, none of

these anthraquinones are taught or suggested by Moriyama, Blunck, or Genta. Accordingly, the Applicants respectfully request reconsideration and removal of the rejection.

Claims 27 and 31 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Moriyama in view of Blunck and further in view of Genta and U.S. Patent No. 5,747,632 to Adachi et al. ("Adachi"). Applicants respectfully traverse this rejection.

Adachi generally discloses polycarbonate resin with high flowability having a viscosity average molecular weight (Mv) of 13,000 to 20,000 and containing below 1% by weight of low molecular weight carbonate compounds having the range of molecular weight 1,000 or below and at least 10% by weight of a polycarbonate oligomer having the range of molecular weight 2,000 to 5,000.

Claims 27 and 31 both ultimately depend from independent claim 1. As mentioned above, Moriyama, Blunck, and Genta, taken alone or together, fail to teach or suggest each and every limitation of claim 1. The specific 1,8-diaminoanthraquinones required by claim 1 are not taught or suggested. Adachi also fails to provide the requisite teaching or suggestion which is absent in Moriyama, Blunck, and Genta. Indeed, Adachi fails to teach anthraquinones at all. Reconsideration and withdrawal of this rejection are respectfully requested.

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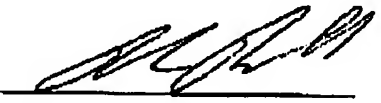
It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the objection(s) and rejection(s) and allowance of the case are respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862.

Respectfully submitted,

CANTOR COLBURN LLP

By 

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